

We Claim:

- 1 1. Cooked, buoyant waxy wheat comprising no more than about 10% amylose starch,  
2 characterized by being gelatinized throughout and storage stable in the absence of  
3 additives that inhibit development of rancidity.
  
- 1 2. Waxy wheat of claim 1, comprising a protein content of no more than about 14% by  
2 weight.
  
- 1 3. Waxy wheat of claim 1 in the form of integral whole kernels or ground whole  
2 kernels.
  
- 1 4. Waxy wheat of claim 1 wherein the waxy wheat is pearly.
  
- 1 5. Waxy wheat of claim 1 wherein the waxy wheat is about 1% to about 30% pearly.
  
- 1 6. Waxy wheat of claim 1, wherein the waxy wheat comprises a Wx-D1 null, Wx-A1  
2 or Wx-B1 null allele.
  
- 1 7. Waxy wheat of claim 1 wherein said cooked, buoyant waxy wheat is storage stable  
2 for at least about six months.
  
- 1 8. Waxy wheat of claim 1 wherein said cooked buoyant waxy wheat is storage stable  
2 for at least about 12 months.
  
- 1 9. Waxy wheat of claim 1, further comprising an edible coating.
  
- 1 10. Waxy wheat of claim 9, wherein the coating is selected from the group consisting of  
2 sucrose, dextrose, rice syrup, carnauba wax, polymeric fructose, corn syrup solids  
3 and oil.
  
- 1 11. Edible composition comprising the cooked, buoyant waxy wheat of claim 1.

1 12. Edible composition of claim 12 selected from the group consisting of ready to eat  
2 cereals, muesli, granola grain clusters, snack bars, biscuits, crackers, bread, cakes,  
3 muffins and pie crusts.

1 13. Process for preparing a cooked, buoyant, waxy wheat, comprising:

wherein said wholegrain waxy wheat product is storage stable for at least about six months in the absence of additives that inhibit development of rancidity.

1 14. Process of claim 13, wherein said waxy wheat is heated for about 5 to about 10  
2 minutes with steam and then tempering the waxy wheat for about 1 hour to about 2  
3 hour.

1 15. Process of claim 14, wherein said tempering is about 1 hour at ambient temperature.

1 16. Process of claim 14, wherein said tempering is for about 1 hour at about 160°F (71°C)  
2 to about 200°F (93°C).

1      17. Process of claim 13, wherein the waxy wheat in step (b) is heated for about 45  
2           minutes to about 90 minutes at 200°F (93°C) to about 350°F (177°C) to gelatinize the  
3           waxy wheat.

1 18. Process of claim 13, wherein the waxy wheat in step (b) is heated for about 1 hour  
2 at about 260°F (127°C).

- 1       19.     Process of claim 13, further comprising separating the cooled waxy wheat in step (c)  
2                   into separate kernels prior to drying.
- 1       20.     Process of claim 19, further comprising toasting the separated dried kernels.
- 1       21.     Process of claim 19, further comprising drying the separated kernels to a moisture  
2                   content of 10 to 16% then heating the kernels to about 380°F (193°C) to about 700°F  
3                   (371°C) for 15 to 25 seconds.
- 1       22.     Process of claim 13, wherein flavorings are added to the waxy wheat prior to, during  
2                   or after gelatinization.
- 1       23.     Process of claim 13, wherein the waxy wheat comprises a protein content of about  
2                   less than 14% by weight.
- 1       24.     Process of claim 13, wherein the waxy wheat comprises Wx-D1 null, Wx-A1 or Wx-  
2                   B1 null allele.
- 1       25.     Process of claim 13, further comprising kneading the gelatinized and cooled waxy  
2                   wheat of step (c) under low shear to form a dough.
- 1       26.     Process of claim 25, further comprising shaping and drying the dough to a moisture  
2                   content of 10 to 16%.
- 1       27.     Process of claim 26, wherein further comprising toasting or puffing the shaped  
2                   dough.
- 1       28.     Process of claim 27, wherein the dried dough is puffed by heating the shaped dough  
2                   to about 380°F (193°C) to about 700°F (371°C).

1 29. Process of claim 13, wherein the waxy wheat comprises a protein content of less than  
2 14% by weight of the grain.

1 30. Process of claim 13, comprising

- 2           (a) heating the waxy wheat for 5 to 7 minutes at about 17 psi, then  
3           (b) tempering the heated waxy wheat for about 1 hour, then  
4           (c) cooking the tempered waxy wheat for about 1 hour to about 280°F (138°C)  
5           to gelatinize the waxy wheat, then  
6           (d) kneading the gelatinized waxy wheat under low shear to form a dough, then  
7           (e) shaping the dough and  
8           (f) then drying the dough to a moisture content of about 10% to 16%.

1     31.    Process of claim 13, further comprising puffing or toasting the dried waxy wheat of  
2           step (c).

1 32. Process for preparing a cooked, buoyant, waxy wheat, comprising

- 2           (a) heating a waxy wheat for about 5 to about 10 minutes with steam,  
3           (b) then tempering the heated waxy wheat for about 1 to about 2 hours,  
4           (c) cooking the tempered waxy wheat for about 45 minutes to about 90 minutes  
5           at 200°F (93°C) to about 350°F (177°C) to gelatinize the wholegrain waxy  
6           wheat throughout,  
7           (d) cooling and separating the gelatinized wholegrain waxy wheat, and then  
8           (e) drying the separated wholegrain waxy wheat to a moisture content of about  
9           10% to 16%.

1 33. Process of claim 32, further comprising puffing or toasting the wholegrain waxy  
2 wheat of step (e).

1 34. Cooked, buoyant, waxy wheat produced by the process of claim 13.

1 35. Cooked, buoyant, waxy wheat produced by the process of claim 32.

- 1    36. Process of claim 13, wherein the waxy wheat of step (a) is milled after heating and  
2                         prior to gelatinizing to produce a ground meal.
  
- 1    37. Process of claim 36, further comprising shaping the gelatinized ground meal and  
2                         drying to a moisture content of about 10% to 16%.
  
- 1    38. Process of claim 36, wherein the ground meal is gelatinized in a rotary cooker or  
2                         a cooker-extruder having a die face.
  
- 1    39. Process of claim 36, further comprising extruding the gelatinized ground meal  
2                         and forming the extruded ground meal into a product of a desired shape.
  
- 1    40. Process of claim 39, further comprising toasting or puffing said shaped  
2                         product.
  
- 1    41. Process of claim 39, wherein the shaped product is puffed by heating to about  
2                         380°F (193°C) to about 700°F (371°C).
  
- 1    42. Process of claim 36, wherein the ground meal is gelatinized in a cooker-  
2                         extruder and directly expanded.
  
- 1    43. Process of claim 13, further comprising milling the gelatinized barley of step  
2                         (c) to produce a ground meal.
  
- 1    44. Process of claim 43, wherein said ground meal is formed into a product having  
2                         a desired shape.

1    45.    Process of claim 44, wherein the shaped product is a flake, shred, puff, nugget,  
2                 strip or chip.

46.    Process of claim 44, wherein the shaped product is toasted or puffed.

1    47.    Process of claim 44, wherein the shaped product is dried to a moisture content  
2                 of about 10% to 16%.

1    48.    Process of claim 44, further comprising toasting or puffing the dried shaped  
2                 product.

1    49.    Process of claim 13, wherein the waxy wheat in step (c) is bumped, flaked,  
2                 puffed or toasted.

1    50.    Process of claim 13, wherein the waxy wheat is gelatinized in a cooker-  
2                 extruder having a die face and is directly expanded at the die face.

1    51.    Process of claim 50, wherein the directly expanded gelatinized waxy wheat is  
2                 toasted.